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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,836

04/12/2004

Sandeep Pant

20-336

1754

46900

7590

02/05/2009

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EXAMINER

WILLOUGHBY, TERRENCE RONIQUE

ART UNIT

PAPER NUMBER

2836

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/821,836	<b>Applicant(s)</b> PANT ET AL.	
	<b>Examiner</b> TERRENCE R. WILLOUGHBY	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-42 and 44-47 is/are rejected.
- 7) ☒ Claim(s) 43 and 48-50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

Applicant's amendment filed on September 19, 2008 has been entered. Accordingly Claims 1-36 have been cancelled. New Claims 37-50 have been added. Therefore, Claims 37-50 are now pending in the application. It also includes remarks and arguments.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (Hereinafter "Miller") (US 5,946,177) in view of Love et al. (Hereinafter "Love") (US 5,030,845).

Regarding claim 37, Miller discloses in (Fig. 7), circuitry including an electrical over stress (EOS) shunt connected between a first and a second rail of the circuitry, the EOS shunt comprising:

A switchable low-resistance path (345) connected between the first (305) and second (310) rails; and

A voltage threshold detector (325) comprising a plurality of series-connected diodes (327) connected in series with a resistor (326) between the first (305) and second (310) rails, wherein:

The voltage threshold detector (325) is coupled to turn on and off the switchable low-resistance path (345) based on relative voltage levels of the first and second rails (col. 10, ll. 1-24).

Miller does not disclose the voltage threshold detector further comprises at least one switch connected to selectively bypass at least one of the series-connected diodes.

Love discloses in (Fig. 3), a triggering threshold detector circuit further comprising at least one switch (SW1 or SW2) connected to selectively bypass at least one of the series diode-connected MOSFET transistors (col. 4, ll. 7-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the voltage threshold detector circuit of Miller with the at least one switch connected to selectively bypass at least one of the serial connected diodes (i.e. transistors) as taught by Love et al., in order to provide adjustments to the voltage threshold during the latter stages of production if some or all of the devices are required.

Regarding claim 38, Miller in view of Love discloses the circuitry of claim 38. Miller discloses in (Fig. 7), wherein:

The first rail is a power rail (305); and

The second rail is a ground rail (310).

Regarding claim 39, Miller in view of Love discloses the circuitry of claim 38. Miller discloses in (Fig. 7), wherein the circuitry is implemented in a single integrated circuit (col. 4, ll. 43-48). As is well-known, the technology is available in diversity of Integrated circuits (IC), where any configuration of them may be integrated in a single package as required by the entire apparatus.

Regarding claim 40, Miller in view of Lover discloses the circuitry of claim 38. Further, Miller discloses in (Fig. 7), an electrostatic discharge (ESD) shunt (340) connected between the first (305) and second (310) rails in parallel with the EOS shunt (325, 345), wherein:

The ESD shunt (340) is designed to protect the circuitry from the ESD events; and

The EOS shunt (325, 345) is designed to protect the circuitry from the EOS events having longer than the ESD events. The entire circuitry components disclosed in (Fig. 7), by Miller is able to maintain the shunt NMOSFET (345) in a low resistance conductive state for the full event duration providing protection against electrostatic discharge (ESD) and electrical overstress (EOS) events through the full event (col. 1, ll. 6-8 and col. 10, ll. 36-54).

Regarding claim 41, Miller in view of Love discloses the circuitry of claim 37. Love discloses in (Fig. 3), bypassing one or more of the series diode-connected transistors (10) changes the voltage levels of the triggering threshold detector circuit (col. 4, ll. 7-18). Further, Miller discloses in (Fig. 7), controlling at which voltage level the switchable low-resistance path (345) is turned on based on the preferably adjustment of

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the threshold triggering circuit (325) comprising the number of diodes (327) in series (col. 9, ll. 43-47 and col. 10, ll. 1-24).

Regarding claim 42, Miller in view of Love discloses the circuitry of claim 37. Love discloses in (Fig. 3), wherein the voltage threshold detector comprises at least two switches (SW1, SW2) connected to selectively bypass up to at least two of the series diode-connected transistors (10).

Regarding claim 44, Miller in view of Love discloses the circuitry of claim 37. Further, Miller discloses in (Fig. 4), a driver (i.e. inverter 179, 180) connected between the voltage threshold detector (183) and the switchable low-resistance path (195).

Regarding claim 45, Miller in view of Love discloses the circuitry of claim 37. Miller discloses wherein the driver (Fig. 4, 179, 180) could comprise a plurality of one or more series-connected inverters (col. 6, ll. 50-54).

Regarding claim 46, Miller in view of Love discloses the circuitry of claim 37. Miller discloses in (Fig. 7), wherein the switchable low-resistance path (345) comprises a transistor whose channel (i.e. drain/source) is connected between the first (305) and second (310) rails and whose gate is coupled to the voltage threshold detector (325).

Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (Hereinafter "Miller") (US 5,946,177) in view of Love et al. (Hereinafter "Love") (US 5,030,845) as applied to claim 37 above, and further in view of Whitney et al. (Hereinafter "Whitney") (2002/0024791).

Regarding claim 47, Miller in view of Love discloses the circuitry of claim 37, except comprising a Firewire IEEE 1394 interface.

Whitney discloses a Firewire IEEE 1394 interface with over-voltage and overcurrent protection (page 6, paragraphs [0092-0093], which is well known to provide data transmission between electronic equipment, such as computers, cameras, etc.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Whitney, comprising the Firewire IEEE 1394 interface with the integrated circuit (IC) and electrostatic discharge (ESD) protection device as taught by Miller in view of Love, because certain application required integrated circuits to be inserted into powered up systems, such as computers, cameras, etc., which often require a USB cable, such as a Firewire IEEE interface.

### ***Allowable Subject Matter***

Claim 43 is objected to as being dependent upon a rejected base claim 37, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Combined claim 43 would be allowable over the prior art of record because the prior art does not teach or suggest wherein the resistor is a programmable resistor whose resistance can be selectively changed when the at least one series-connected diode is bypassed as set forth in the claimed invention.

Claim 48 is objected to as being dependent upon a rejected base claim 37, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Combined claim 48 would be allowable over the prior art of record because the prior art does not teach or suggest wherein the resistor is a programmable resistor whose resistance can be selectively changed when the at least one series-connected diode is bypassed as set forth in the claimed invention.

Claims 49-50 are also indicated as allowable subject matter because the claims are dependent upon base claim 48.

### ***Response to Arguments***

Applicant's arguments with respect to claims 37-50 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stockinger et al. (US 2004/0109270) discloses a plurality of inverters (113, 115) connected between the voltage detector (105) and the switchable low-resistance path transistor (106).



Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERRENCE R. WILLOUGHBY whose telephone number is (571)272-2725. The examiner can normally be reached on 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Terrence R Willoughby/  
Examiner, Art Unit 2836  
1/31/09

/Stephen W Jackson/  
Primary Examiner, Art Unit 2836

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